

## Patent claims

1. A roll (100) for pressure treatment of material  
bands,  
5  
with a carrier (3),  
  
with a roll shell (4) mounted around the carrier  
(3),  
10  
with at least one pressure chamber (12) between the  
carrier (3) and the roll shell (4), which chamber  
is filled at least partly with a supporting liquid  
which can transmit the hydraulic supporting force  
15 from the carrier (3) to the roll shell (4), at  
least indirectly,  
  
characterized  
  
20 in that in the at least one pressure chamber (12)  
there is provided an elastic element (18') which  
unrestrictedly communicates with the liquid and is  
compressible when the liquid pressure required for  
producing the hydraulic supporting force is  
25 exceeded.
2. The roll as claimed in claim 1, characterized in  
that the roll comprises at least one leakage  
chamber (13) for receiving supporting liquid  
30 leaving the pressure chamber (12).
3. The roll as claimed in claim 2, characterized in  
that at least one elastic element (18) is provided  
in the at least one leakage chamber (13).  
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4. The roll as claimed in one of claims 1 to 3,  
characterized in that the at least one elastic

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element (18, 18') comprises a hollow chamber which is, or can be, provided with a compressible medium.

- 5       5. The roll as claimed in claim 4, characterized in that the at least one elastic element (18, 18') is formed as a hose.
- 10       6. The roll as claimed in claim 4 or 5, characterized in that the compressible medium is air.
- 15       7. The roll as claimed in claim 6, characterized in that the elastic element (18, 18') is closed and filled with a predetermined pressure.
- 20       8. The roll as claimed in claim 7, characterized in that the elastic element (18, 18') is subjected to air under atmospheric pressure.
- 25       9. The roll as claimed in claim 7, characterized in that the elastic element (18, 18') comprises a one-way valve, by means of which it can be filled with air under a pressure that is lower than the pressure exerted on the hydraulic supporting liquid during operation.
- 30       10. The roll as claimed in claim 6, characterized in that the at least one elastic element (18, 18') is connected to a compressed air source (26), by means of which the pressure can be adjusted in such a way that it is always slightly higher than the pressure exerted on the hydraulic supporting liquid.
- 35       11. The roll as claimed in one of claims 5 to 10, characterized in that the elastic elements (18, 18') formed as hoses comprise means for internal support (20).

12. The roll as claimed in claim 10, characterized in that the means for internal support (20) comprise a spiral coil of an elastically deformable material.
- 5 13. The roll as claimed in one of claims 1 to 12, characterized in that the at least one elastic element (18, 18') is provided in a recess machined into the carrier (3).
- 10 14. The roll as claimed in claim 13, characterized in that the recess has the form of an axially parallel running longitudinal groove (14, 15, 16, 17).
- 15 15. The roll as claimed in one of claims 1 to 14, characterized in that means for determining the hydraulic pressure exerted on the supporting liquid are provided.
- 20 16. The roll as claimed in claim 15, characterized in that the roll is designed in such a way that the means for determining the hydraulic pressure serve for controlling or regulating the pneumatic pressure to which the at least one elastic element (18, 18') is subjected.